Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Math 227 / Fall 2019 / Prof. David Soto

**Module 4. Activity 2.**

You may access the data for this activity with the following command:

**MelanomaStudy <- read.csv("https://tinyurl.com/yynx45hj", header=TRUE)**

**Survival from Malignant Melanoma**

**Description**

The **MelanomaStudy** data frame has 205 rows and 7 columns.

The data consist of measurements made on patients with malignant melanoma. Each patient had their tumour removed by surgery at the Department of Plastic Surgery, University Hospital of Odense, Denmark during the period 1962 to 1977. The surgery consisted of complete removal of the tumour together with about 2.5cm of the surrounding skin. Among the measurements taken were the thickness of the tumour and whether it was ulcerated or not. These are thought to be important prognostic variables in that patients with a thick and/or ulcerated tumour have an increased chance of death from melanoma. Patients were followed until the end of 1977.

**Format**

This data frame contains the following columns:

time

Survival time in days since the operation, possibly censored.

status

The patients status at the end of the study. 1 indicates that they had died from melanoma, 2 indicates that they were still alive and 3 indicates that they had died from causes unrelated to their melanoma.

sex

The patients sex; 1=male, 0=female.

age

Age in years at the time of the operation.

year

Year of operation.

thickness

Tumour thickness in mm.

ulcer

Indicator of ulceration; 1=present, 0=absent.

**Question 1.**